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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,167	07/09/2003	Shigeru Muramatsu	2552-000050	1106
27572	7590	12/29/2005		EXAMINER
		HARNESS, DICKEY & PIERCE, P.L.C.		WARREN, DAVID S
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			ART UNIT	PAPER NUMBER
				2837

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SK

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/616,167	MURAMATSU ET AL.
	Examiner	Art Unit
	David S. Warren	2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 12 October 2005.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-19 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-19 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 09 July 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____.

## **DETAILED ACTION**

*As stated in the previous Office Action (July 13, 2005) with an additional "New Matter" rejection:*

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The terms "upper," "lower," and "bottom" in claim 5 are relative terms which renders the claim indefinite. These terms are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Clarification is requested.

3. Claims 1 – 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There does not appear to be an adequate

description of "side board" in either of the independent claims 1 and 14. The Examiner found reference to "side walls" in the specification, but this does not seem to be consistent with the language used in the claims.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Broadmoore (5,081,893). Regarding claims 1 and 14, Broadmoore discloses the use of an acoustic keyboard musical instrument including a case having a bottom board (2) formed with plural holes (fig. 1; 32, fig. 5), a tone generating mechanism (pianos inherently have tone generating systems), an automatic playing system (i.e., "player pianos" are automatic), plural actuators (3A, 3B; fig. 1) having plungers (19) passing through the holes, converters (16), and a controller ("selective energization and deenergization" are deemed equivalent to a "controller" – col. 6, lines 16 – 18). Any tool is deemed a "handy tool" and tools were inherently used to install and retrofit the actuators of Broadmoore. Regarding claims 2 and 19, the holes are larger than the plungers (fig. 2). Regarding claim 3, the screw-type thread of Broadmoore's actuator is functionally equivalent to Applicant's claim that the holes are "narrower than a cross

section of associated one of said converters.” Regarding claim 4, fig. 1 of Broadmoore shows that holes, plungers, and converters are staggered. Regarding claim 5, as best as can be understood (see §112 rejection supra), “upper” is deemed to be that part of 2 used for mounting 3B, and the “lower” is used to mount 3A. Regarding claim 6, each plunger has a head (14), while Broadmoore is silent as to the resiliency of 14, Broadmoore does use element 14 in association with element 13 (felt, i.e., resilient) and element 29 (col. 6, lines 45 – 48 discuss the resilient washer 29). The Examiner maintains that the structure of Broadmoore is functionally equivalent to that of the Applicant. Regarding claim 7, Broadmoore discloses the use of a stopper (24, 25) movable with the hole (32). Regarding claim 8, as defined by Applicant, bushes are shown in Broadmoore as elements 27 and 30). Regarding claim 9, Broadmoore describes retrofitting a grand piano (col. 2, lines 53 – 56), thus plural keys, plural action units, strings, and plural hammers are part of the Broadmoore invention. Regarding claims 10, 11, 16, and 17, Broadmoore discloses retrofitting either a grand piano or an upright piano (col. 6, lines 41 – 44). Regarding claims 12 and 13, Broadmoore shows the use of electrical solenoids (3). Regarding claims 15 and 18, while Broadmoore does not specifically mention “putting marks indicative of boundaries between keys” and “calculating an intermediate point...” these limitations appear to apply to positioning the converters on the piano. Certainly, Broadmoore would devise a system to correctly position the solenoids and actuators, otherwise, the Broadmoore invention would be inoperable. Therefore, the Examiner deems the limitations of claims 15 and 18 to be

functionally equivalent to Broadmoore's system for positioning and mounting the actuators.

### ***Response to Arguments***

4. Applicant's arguments filed October 12, 2005, have been fully considered but they are not persuasive. Regarding the Applicant's response to the §112 rejection in the previous Office Action: The Applicant has added that the "lower" portion is "closer to a bottom." The term "bottom" is also a relative term. Specifically, the Examiner wonders if the "top" or "bottom" (or "lower" or "upper") will change if the device is used on an upright piano as opposed to a grand piano, i.e., will the "lower" portion be turned to be on a side? Again, ~~these terms~~ (lower, upper, bottom, top, etc.) are relative terms and the Applicant has not provided any standard for comparison. The Examiner suggests the following language (i.e., this is not an indication of allowability): "...converters are alternatively connected to first and second adjacent portions...".

5. Regarding claims 1 and 14, the Applicant amends the claims to include a "side board connected to the periphery of [the] bottom board for defining a side surface of [the] case..." The Applicant then argues that "the mounting plate (2) [of Broadmoore] is not corresponding to the bottom board, because the side board is not connected to the periphery of the mounting plate (2)." First, the Examiner maintains that the mounting plate (2) of Broadmoore corresponds to the bottom board because it performs precisely the same function as that of the bottom board, i.e., formed with plural holes for receiving

plungers passing through the holes [which are] reciprocally moved for actuating the tone generating mechanism..." Second, adding a side board to the mounting plate (or bottom board) will not alter its function. Furthermore, it does not appear that Applicant's specification relating to the side board (i.e., there is no support for side board in the specification). Therefore, the Examiner puts forth the argument that the interior walls of Broadmoore's element 1 provide protection of the solenoids and are therefore, deemed to be functionally equivalent to "side boards."

6. The Applicant also argues that "the mounting plate (2) is only expected to bear the striker solenoids (3A, 3B), and the keyboard (1) bears the keys (10, 11), which form parts of the tone generating mechanism." The Examiner can see no distinction between this description and the Applicant's invention. The Applicant's assertion that "the user will suffer from the deformation of the keyboard (1)" appears to be a *non sequitur*. The structure of Broadmoore and the Applicant's claims are similar, the deformation of the keyboard appears to be irrelevant.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

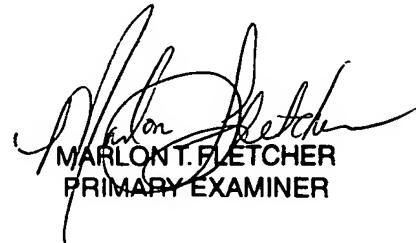
mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Warren whose telephone number is 571-272-2076. The examiner can normally be reached on M-F, 9:30 A.M. to 6:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on 571-272-2800 ext 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dsw



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PRIMARY EXAMINER